



Missouri Department of Natural Resources

Water Quality Coordinating Committee Water Protection Program

Minutes

March 15, 2005

WATER QUALITY COORDINATING COMMITTEE

DNR Conference Center
1738 E. Elm Street
Roaring River Conference Room
Jefferson City, Missouri

March 15, 2005
10:00 a.m.

MEETING AGENDA

Nutrient Criteria for Missouri Reservoirs and Lakes, Dan Obrecht, UMC

Watershed Management Plan Worksheet, Steve Bauguess, WPP

319 Upper Cedar Creek Project, Stuart Miller, LRP

Other

Agency Activities

Meetings & Conferences

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MINUTES

Attendees:

Phil Schroeder	DNR/WPP/Water Pollution Control Br.	Mubarak Hamed	DNR/GSRAD/Water Resources Pgm
Shane Barks	USGS	Stuart Miller	DNR/ALPD/Land Reclamation Pgm-AML
Miya Barr	USGS	Cindy Wolken	DNR/WPP/Water Pollution Control Br.
John Lodderhose	St. Louis MSD	Randy Lyman	City of Springfield
Angel Kruzen	Water Sentinel	Stacia Bax	DNR/WPP/Water Pollution Control Br.
Bob Hentges	MO Public Utility Alliance	Priscilla Stotts	DNR/WPP/Water Pollution Control Br.
Steve Bauguess	DNR/WPP/Water Pollution Control Br.	Verel Benson	UMC – FAPRI
Ann Crawford	DNR/WPP/Water Pollution Control Br.	Robert Brundage	Newman, Comley & Ruth
Darlene Schaben	DNR/WPP/Water Pollution Control Br.	Georganne Bowman	DNR/WPP/Water Pollution Control Br.
Mark Osborn	DNR/WPP/Water Pollution Control Br.	Greg Anderson	DNR/WPP/Water Pollution Control Br.
Dan Obrecht	UMC	Cindy DiStefano	MDC
Tony Thorpe	UMC - LMVP	John Johnson	DNR/WPP/Water Pollution Control Br.
Anne Peery	DNR/WPP/Water Pollution Control Br.	Charlie DuCharme	DNR/GSRAD/Water Resources Pgm
Colleen Meredith	DNR/WPP/Water Pollution Control Br.	Bob Bacon	Env Resources Coalition
Bonnie Liscek	EPA, Region 7	Bob Ball	USDA – NRCS
Pete Davis	EPA, Region 7	Ed Galbraith	DNR/Water Protection Program
Charles Hays	DNR/GSRAD/Water Resources Pgm		

Phil Schroeder, Chief, Water Quality Monitoring and Assessment Section, Water Protection Program, chaired the meeting. Introductions were made.

Nutrient Criteria for Missouri Reservoirs and Lakes, Dan Obrecht, UMC

PowerPoint Presentation

Dan said the state is to have criteria in place for its reservoirs and lakes by the beginning of 2006. Figuring out the appropriate levels of phosphorus and nitrogen is proving to be a challenge. Dan presented an approach that EPA suggested. He also presented what he thought would work in Missouri.

EPA suggested an umbrella approach, where reference reservoirs and lakes are sampled. The 75th percentile then becomes the criteria. If there are no lakes and reservoirs without impacts, then all are sampled and the 25th percentile becomes the criteria. Or, EPA's 304(a) criteria can be used. Dan said some problems occur with this approach. All water bodies are being looked at as the same without considering the differences among water body types. He showed an example of the difference between oxbow lakes and reservoirs. Oxbow lakes showed high nutrients because of their morphology (shallow) and location in the landscape (erodible floodplain). Several drinking water reservoirs from the same general area were sampled over a period of time and there was a lot of variability within the same reservoir and among the reservoirs. The second approach would be the "step approach" where the designated use is decided, then find where the impairment starts and look at amount of algae associated with that impairment, then that would be the criteria level. One problem with this is figuring out what impairment is and where it starts. There may be too many factors that influence water quality and too much variability within and among systems to allow for the state to set a single set of criteria to be used by the state for regulation.

EPA's letter allows some flexibility. Dan talked about a different approach. The actual factors that control the nutrients would be looked at. The nutrients in the water body relate to the amount of impact in the watershed and hydrology (residence time). The key to how residence time relates to water quality in a reservoir is that the longer the water is in the reservoir the more chance there is for nutrient uptake and sedimentation to occur. A longer residence time is better for lower nutrient levels. If you're dealing with a shorter residence time, there is a lot more inflow and less ability to dilute that initial inflow. Dan showed several graphs where 135 reservoirs throughout the state were used to display residence time (water body's ability to settle that material) and proportion of crop land use in the watershed (nutrient input). Both land use and residence time dictate and play a role in nutrient levels in the reservoir. This can be used to help determine the expected nutrient levels. Reservoirs can be broken up based on the amount of row crop in the watershed then short, medium and long residence times.

In order to use agriculture to classify reservoirs, it has to be realized that pinpointing the nutrient levels where impairment begins is virtually impossible; and, the reservoirs were built into landscapes that had already been altered.

Water quality in reservoirs depends not only on morphology and hydrology, but also location and landscape. Those in forested watersheds have low nutrients. Those in watersheds with agriculture have high nutrients. In data found from 1920, between 11% and 21% of total land mass was dedicated to corn. Agriculture has been part of Missouri for a long time. Only 8% of the reservoirs existed then. If a reservoir has a residence time of six months with no agriculture in the watershed, more protection should be given.

This approach would allow the state to identify and protect the reservoirs that have low nutrient levels due to low watershed impacts; identify and focus efforts on the reservoirs that have higher nutrient concentration than expected, given watershed land use and hydrology; gauge the potential for successful nutrient reduction by looking at the factors that control in-reservoir nutrient concentrations; and, focus limited resources (money, time, effort) on those reservoirs where improvements can be made.

Watershed Management Plan Worksheet, Steve Bauguess, WPP

PowerPoint Presentation

Steve presented a guidance worksheet that will help with development of watershed management plans. He displayed a flow chart showing available 319 funding for FY03 and 04. He explained the differences of base funding and incremental funding and how each can be spent. The incremental funding has to be used for implementation projects; the base funding can be used for information and education projects. FY05 base funding has been cut by 50%, thereby making it more competitive to receive this funding.

To receive incremental funding, the project must address nonpoint source pollution; include water bodies that are impaired by nonpoint source pollutants that are on the 303(d) list or that have approved TMDLs; and be under the guidance of a watershed management plan that contains EPA's nine critical elements. A completed Watershed Management Plan (WMP) must be designed to achieve load reductions called for in the TMDL. If no TMDL has been completed, the plan must be designed to reduce pollutant loads to meet water quality standards. Currently, there are no approved WMPs in Missouri.

The Request for Proposal (RFP) for grant funding to develop a WMP can be found on the department's nonpoint source web site (<http://www.dnr.mo.gov/wpscd/wpcp/nps/index.html>). A one-time allotment of \$300,000 has been set aside for this grant program. Applicants can apply for funding from \$5,000 to \$15,000 per project. A 40% match is required with a project duration of two years. Applications are being accepted four times per year. May 15 is the next deadline.

The worksheet was designed to provide guidance for the development of WMPs that meet requirements of EPA to be eligible for funding; to help the user find basic information to begin the development of a WMP; and to provide

information about the nine elements. Completing this worksheet provides basic necessary information from which an approved WMP can be developed and implemented.

Steve went over the worksheet information and the attachments and explained that the worksheet is designed to be used electronically because it contains web links to informational resources. An electronic copy can be obtained by contacting Steve or Darlene Schaben.

Steve showed a map of the areas of targeted nonpoint source impaired water bodies.

Bob Ball mentioned that there are already some watershed management plan success stories in the state but may not all meet the EPA's nine critical elements.

319 Upper Cedar Creek Project, Stuart Miller, Land Reclamation Program (LRP)

PowerPoint Presentation

Stuart began by showing a picture of a wetland constructed in Cedar Creek. He said Cedar Creek was one of the worst abandoned mined land (AML) acid mine drainage (AMD) sites in the Midwest. Several fish kills had occurred because of AMD. Cedar Creek is located near the Boone and Callaway county lines. An aerial view taken in 1984 showed significant erosion washing into the stream. Cedar Creek is on the 303(d) list of impaired waters for low pH and high sulfates. Using AML Reclamation funding, 3 sites were reclaimed between 1981 and 1990 and 700 acres were stabilized and revegetated. This improved the water quality. Flooding in the 1990's damaged stream banks and exposed the acid materials that caused the problems in the beginning.

The LRP then applied for and received Section 319 funding. The goals for the Upper Cedar Creek Project were to reduce AMD, low pH, dissolved iron and sulfates; repair flood damage and stabilize eroding stream banks; restore the aquatic ecosystem; and plant native grasses, shrubs and trees to restore riparian, flood plain and upland wildlife habitat. Other partners on this project included the landowners, Office of Surface Mining, USGS, EPA, NRCS, MDC, DNR, Boone County SWCD and the Columbia Audubon Society. They built six wetlands, repaired 2700 linear feet of stream bank at 16 locations, neutralized four acid ponds, and planted 66 acres of native grasses and 200,000 tree seedlings. One major problem was that acid materials were still down deep. The LRP had to go back and amend these sites to get vegetation established. After the wetlands were built between 2000 and 2002, they found that acidity was neutralized, alkalinity increased, dissolved iron was reduced, sulfate (a by-product of pyrite weathering) slightly reduced, and the aquatic ecosystem was recovering pretty quickly. Stuart explained how the wetlands were designed and constructed. For additional treatment, cells surround the passive treatment systems. These help remove some metals and increase alkalinity. These cells were designed to have a treatment life of 15 years. Vegetation was planted along stream banks and within rock itself with the idea that sediment would drop out behind the plants and add more earth materials into the rocks. Planting the 200,000 trees improved wildlife habitat and stabilized eroding stream banks.

The total cost to build the wetlands was \$354,000 of which \$150,000 was provided by a 319 nonpoint source grant. A USGS preliminary report of Cedar Creek indicated the stream aquatic biota has greatly improved. Also, water quality data shows the stream has greatly improved. The greatest impairment now on this portion of Cedar Creek is agricultural runoff. The USGS final report can be found on Internet.

Stuart showed a picture of the Perche Creek Reclamation Project, which was completed last fall. It looked like Cedar Creek did but ten times larger. It is approximately 40 acres. Acid mine drainage caused sedimentation in the stream. Approximately 7,000 tons of AMD was leaving the site per acre. The Perche Creek project goals were to grade 40 acres back to a gentle slope and plant native grasses, trees and shrubs; build three ponds totaling six acres to control storm water, reduce off-site head cutting and erosion; create 3.4 acres of wetlands in the minespoil to passively treat acidic seeps and improve water quality; and, restore aquatic, riparian and floodplain ecology and wildlife habitat while mitigating AMD and erosion of acid-forming materials. Unlike Cedar Creek, they are running out of time and money. The AML program is ending. It will be the responsibility of the landowners to fix the small problems that come up. The AML Emergency Program is also ending July 1. AML still has about ten active projects that are significant threats to water quality that will not get done.

Ed explained that having federal funding for the AML program is contingent upon having the Coal Mine Regulatory Program. The state discontinued funding for the Coal Program approximately two legislative sessions ago. This necessitated an end to the federal funding. Any questions regarding this program can be directed to Dan Schuette, Interim Director, Air & Land Protection Division.

Agency Activities

Stacia Bax said she is still working on getting the water quality standards rulemaking package to the Secretary of State's Office by the end of April in order for it to be published by June 1. She explained the routing process before it gets to the Secretary of State's Office.

Priscilla Stotts said they are taking registrations for twelve trainings in the state for the Introductory Level Volunteer Water Quality Monitoring Workshops. Currently, 200 have registered.

Shane Barks said they recently completed their annual data report. It is now available on the web at www.mo.water.usgs.gov.

John Lodderhose mentioned a video with four 30-second commercials on storm water pollution prevention that is currently airing in the St. Louis area. It is also on MSD's web site along with other storm water activities. It is targeted toward homeowners and what they can do to prevent storm water pollution. The Missouri Water Environment Association's annual meeting is being held this weekend at Tan-Tar-A.

Angel Kruzen attended a QAPP training in California recently. She will soon be sending QAPPs to DNR. She is also planning to attend the River Retreat in Keystone, Colorado, to hear discussion on zero degradation streams and regulations and how they apply.

Bob Hentges has been working with Missouri Public Utility Alliance (MPUA) since retiring from DNR. He reports to the 90-member cities on what the department is doing so they can follow correct procedures. He plans to retire from this job in November. MPUA will then be looking for a replacement. Contact Bob if interested.

Ann Crawford attended a Tri-State Watershed meeting. They are working to get Kansas, Oklahoma and Missouri to unite in the AML problem in Spring River, Turkey and Center creeks. She said there are 41 TMDLs due for calendar year 2005. It will be a challenge.

Mark Osborn does modeling work for the TMDLs. He is also working on developing a state nutrient criteria plan, which Dan may be able to assist with.

Dan Obrecht said they are getting ready for the summer sampling season to monitor 100 lakes this year.

Tony Thorpe works with the Lakes of Missouri Volunteer Program. They are just finishing up the data report, which should be printed in approximately four weeks.

Anne Peery mentioned a Tri-State Mining Forum that will be held on April 12-14, 2005. This is the next step in getting the three states to work together. The Forum will include technical presentations and deciding how to move forward.

Stuart Miller said they are working on a Sugar Creek project around Huntsville. This is a study on AMD. He said they are also trying to get involved with the Tri-State Mining.

Randy Lyman said they are working on a \$19M expansion on the northwest plant to upgrade and increase capacity. They will be installing phosphorus and nitrogen removal capabilities. Chlorine disinfection and sulfur dioxide

dechlorination processes will be removed and replaced with UV disinfection. As another part of this project, they are building an \$800,000 lift station. They just completed the second annual report for the MS4 permit.

Bob Ball said two draft success stories have been submitted to NRCS national headquarters looking at what MO is doing to address hypoxia in the Gulf of Mexico. They include the Lower St. Francois River basin (Cypress Ditch) and North Fork of Salt River (SALT project). Bob thought their agency was doing this for the whole Mississippi Valley, which may be 5-9 success stories but only 3-4 may be chosen. They may use those to launch a new watershed initiative to address hypoxia. Bob may be asking for more technical assistance on these if they ask for additional information. It's hard to include everything that's happened for several years on just one page.

The CSP (Conservation Security Program) sign-up should start in the next couple of weeks. In Missouri, there are six watersheds in progress with local workgroups to handle sign up. In the Black River, for example, over 8,000 letters were sent to potential applicants. Bob estimates may 300-400 interested but only 100-200 that would be eligible. There are major dollars at stake. The intent of the CSP program is to impact all of the 8-digit HUCs in the country. Little River District in the bootheel area was an extremely successful pilot projects last year. More information can be found on the NRCS web site.

The Water Quality Short Course will be held April 12-14, 2005, in Columbia. Bob Broz is the contact. "It's the Water" Workshop will be held September 13-15, 2005, in Hannibal, sponsored by the Soil & Water Conservation Society. Contact Bob for more information.

Ed Galbraith, new director of WPP, said he hoped to make the best use of these forums and stakeholder groups and may be sending out a survey to determine if anything needs improved or modified. He is still trying to get a grasp on all the issues in WPP.

Georganne Bowman mentioned that EPA is releasing their Maximum Achievable Control Technology (MACT) Rule today.

Greg Anderson attended an EQIP listening session looking at EQIP priorities. They received 3000 applications for 2005. He is involved in assisting with the SALT application reviews, which will take place next week. They received approximately 24 applications. Greg said the 319 grant training on March 9 was a success. Final applications for the 2005 319 grants are due May 16. Approval of the FY04 319 grant is pending. Further minigrant funding is pending approval of this grant.

Cindy DiStefano said MDC is looking for ideas to improve things they do, what needs expanded or things they need to do or do better. Let Cindy know if you have ideas.

Bob Bacon is the technical lead on water quality studies at the Environmental Resources Coalition. They are partnering with EPA and DNR on the Ecological Water Resources & Assessment Project (EWRAP) looking at water quality criteria definition and technical assistance materials. They are in the planning phase of the southwest Missouri project. They are also working with ARS on a large ag runoff project.

Verel Benson mentioned that FAPRI is completing the Little Sac project. He is trying to finalize a national CRP assessment for FSA. They are starting the Upper White River 319 project.

Phil Schroeder said the Water Quality Standards are moving along and staff soon will begin the next 303(d) list. This will be brought to the WQCC when it's further along. A wet weather workgroup is meeting this afternoon to discuss wet weather issues and how they should be addressed in the standards and permits. There is a directive from the CWC to look at the effluent limits rules. Phil encouraged the group to look at the water quality standards information that is available on the department's web site. There may be more meetings to discuss these as an educational opportunity.